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USSR METHOD OF ANESTHESIA BY MEANS OF NOVOCAIN-HEXENAL INFILTRATION OF TISSUES

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When a patient is nervous and excitable, suffers from hysteria, or has a labile psyche, impressions connected with the retention of tactile sensitivity may result in undesirable reactions during a surgical operation. There are many combinations of anesthetics with the aid of which the surgeon can eliminate participation of the cerebral cortex in order to exclude sensations that may be disagreeable to the patient during an operation.

For the past 4 years, we have applied novocain-hexenal [evipal sodium] infiltration of tissues as a method of anesthesia. This method was originally used only in cases of brief surgical operations that continued for no longer than 30-40 min. Subsequently, we applied this type of anesthesia in operations which took more time, i.e., resections of the stomach, intestinal tract, etc. The procedure was as follows.

Thirty minutes before the operation, we injected subcutaneously one cubic centimeter of a one-percent solution of pantopon or morphine. Immediately before the operation, one [gram?] of hexenal diluted with 250-300 g of a 0.25% solution of novocain was injected into the soft tissues along the line of the projected incision. We noticed that the depth of sleep and the speed with which it is enhanced by having absolute quiet in the operating room. Furthermore, to make sure that hexenal and novocain develop a sufficient effect, it is necessary to wait for 4-6 min after the infiltration of tissues before the operation can be begun. In more prolonged operations, when it was necessary to lengthen the period of sleep, we introduced in rare cases an additional quantity of the drug mixture under the peritoneum or into the thickness of the mesenterium. This additional quantity amounted to 0.5-1.0 [g?] of hexenal dissolved in 10.0-20.0 g of a 0.25% solution of novocain. The total dose of hexenal did not exceed 2.0 [g?].

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Using this technique, we succeeded in most cases in "switching off" the patient's consciousness, as well as in establishing complete anesthesia. The state of sleep continued during the whole operation and was sustained for several hours after the operation. In the zone of the operation wound, no changes were observed that made it possible to distinguish this type of anesthesia from ordinary infiltration of tissues with novocain.

Among the operations performed by us with the aid of novocain-hexenal infiltration, there were 54 appendectomies, 45 resections of the stomach, 41 various laparotomies, 30 gastroenteral anastomoses, 13 amputations of extremities, 12 suturings of perforating ulcers of the stomach and the duodenum, 8 amputations of the mammary glands, and 9 other operations.

In cases where the use of more than 250 g of the anesthetizing solution were required during the course of the operation, hexenal was dissolved in the first 250 g that were used. After 250 g of solution had been applied, the tissues were perused with novocain solution not containing any hexenal. In cases where patients performed involuntary motions during the operation (attempts to raise a limb), an increased narcotic effect was necessary. This effect was achieved by an additional application of hexenal.

In 39 cases, novocain-hexenal anesthesia had to be supplemented by ether narcosis. This necessity arose because the patients in question exhibited excitement, as well as violent and prolonged reactions, to the displacement of organs. It is characteristic that the quantity of ether which had to be used in these cases did not exceed 50.0-60.0 cc [?].

Subsequent observations showed that the nervous system of persons who had used narcotics or excessive quantities of alcohol exhibited an inverted reaction to hexenal. In such persons, hexenal produced excitement. At present, we desist from using novocain-hexenal anesthesia on such patients.

The post operative period in patients who underwent novocain-hexenal anesthesia included continuation of sleep for 30-40 min. Occasionally, the patients awoke for a brief time and then fell into natural sleep that continued for 4-5 hours. Invariably, patients developed a lasting amnesia in regard to the operation and the immediate postoperative period. This also applied to patients who exhibited excitement during the operation.

There were no complications, no effects on the composition of the blood or urine, and no changes in the blood pressure. Whatever insignificant fluctuations of blood pressure, etc., were observed, they did not differ from those that occur after operations carried out with the aid of novocain anesthesia.

If the patient suffers from some disease of the internal parenchymatous organs, the use of novocain in combination with hexenal is contraindicated.

To summarize, the following may be said:

1. To produce local anesthesia and simultaneously exclude the patient's consciousness, novocain-hexenal layer-by-layer infiltration of tissues is of advantage.
2. Application of this method does not result in any complications; it brings about a lasting amnesia during the postoperative period.
3. Novocain-hexenal infiltration of tissues is recommended in cases where debilitated persons or patients exhibiting a heightened nervous excitability are operated on.

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